

That which is claimed is:

1. A method of controlling a semiconductor dicing saw, comprising:
dynamically adjusting a saw cut pattern of the semiconductor dicing saw
during a sawing operation of at least a portion of a semiconductor wafer.

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2. The method of Claim 1, wherein dynamically adjusting comprises
dynamically adjusting a saw cut pattern of the semiconductor dicing saw based on
detection of a saw blade of the dicing saw contacting the semiconductor wafer.

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3. The method of Claim 2, wherein dynamically adjusting comprises:
terminating a current saw cut of the semiconductor dicing saw based upon
detection that the saw blade no longer contacts the semiconductor wafer; and
proceeding to a subsequent saw cut upon termination of the current saw cut.

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4. The method of Claim 3, wherein proceeding to a subsequent saw cut
further comprises beginning the subsequent saw cut at a start position based upon
detection of when the saw blade is in contact with the semiconductor wafer during the
current saw cut.

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5. The method of Claim 3, wherein terminating a current saw cut
comprises:

detecting that the saw blade no longer contacts the semiconductor wafer;
waiting a predefined time and/or distance of travel of the saw blade after it is
detected that the saw blade no longer contacts the semiconductor wafer; and

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terminating the current saw cut if after the predefined time and/or distance the
saw blade still no longer contacts the semiconductor wafer.

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6. The method of Claim 2, wherein dynamically adjusting a saw cut
pattern of the semiconductor dicing saw based on detection of a saw blade of the
dicing saw contacting the semiconductor wafer comprises:

detecting a level of strain of the saw during a saw cut; and
dynamically adjusting a saw cut pattern of the semiconductor dicing saw
based on the detected level of strain indicating when the saw blade is contacting the
semiconductor wafer.

7. The method of Claim 6, wherein detecting a level of strain comprises detecting strain associated with a drive shaft of the saw and/or sensing current provided to a drive motor of the saw.

8. The method of Claim 6, wherein dynamically adjusting a saw cut pattern of the semiconductor dicing saw based on the detected level of strain indicating when the saw blade is contacting the semiconductor wafer comprises dynamically adjusting a saw cut pattern of the semiconductor dicing saw if the detected level of strain falls below a predefined strain threshold.

9. The method of Claim 8, wherein the predefined strain threshold is based on cut depth, wafer thickness, blade wear and/or blade rotational speed.

10. The method of Claim 1, further comprising mapping a shape of at least a portion of the semiconductor wafer based on the dynamically adjusted saw cut pattern.

11. The method of Claim 10, wherein mapping a shape comprises mapping a shape of the at least a portion of the semiconductor wafer based on detecting when the saw blade is contacting the at least a portion of the semiconductor wafer.

12. The method of Claim 10, wherein mapping a shape is carried out based on a first cutting pass of the at least a portion of the semiconductor wafer.

13. The method of Claim 10, further comprising establishing a path of the saw blade for a second cutting pass of the semiconductor wafer based on the mapped shape of the at least a portion of the semiconductor wafer.

14. The method of Claim 2, further comprising providing a minimum saw cut length for each saw cut irrespective of detection of the saw blade of the dicing saw contacting the semiconductor wafer.

15. The method of Claim 1, wherein the wafer comprises a SiC wafer.

16. The method of Claim 1, wherein at least one saw cut of the saw cut pattern does not extend completely through a thickness of the semiconductor wafer.

5 17. A system for controlling a semiconductor dicing saw, comprising:
a contact sensor circuit configured to sense when a blade of the dicing saw is in contact with a semiconductor wafer;
a dicing saw controller circuit configured to control saw cuts of the semiconductor dicing saw and further comprising:
10 an adaptive saw cut circuit configured to dynamically adjust a saw cut during the saw cut based on whether the contact sensor circuit senses that the blade of the dicing saw is in contact with the semiconductor wafer.

15 18. The system of Claim 17, wherein the adaptive saw cut circuit is further configured to terminate a current saw cut of the semiconductor dicing saw based upon detection that the saw blade no longer contacts the semiconductor wafer and proceed to a subsequent saw cut upon termination of the current saw cut.

20 19. The system of Claim 18, wherein the adaptive saw cut circuit is further configured to begin the subsequent saw cut at a start position based upon detection of when the saw blade is in contact with the semiconductor wafer of the current saw cut.

25 20. The system of Claim 18, wherein the adaptive saw cut circuit is further configured to wait a predefined time and/or distance of travel of the saw blade after it is detected that the saw blade no longer contacts the semiconductor wafer and terminate the current saw cut if after the predefined time and/or distance the saw blade still no longer contacts the semiconductor wafer.

30 21. The system of Claim 17, wherein the contact sensor circuit is configured to detect a level of strain of the saw during a saw cut; and wherein the adaptive saw cut circuit is further configured to dynamically adjust a saw cut pattern of the semiconductor dicing saw based on the detected level of strain indicating when the saw blade is contacting the semiconductor wafer.

22. The system of Claim 21, wherein the contact sensor circuit detects strain associated with a drive shaft of the saw and/or senses current provided to a drive motor of the saw.

5 23. The system of Claim 21, wherein the adaptive saw cut circuit is further configured to dynamically adjust a saw cut pattern of the semiconductor dicing saw if the detected level of strain falls below a predefined strain threshold.

10 24. The system of Claim 23, wherein the predefined strain threshold is based on cut depth, wafer thickness, blade wear and/or blade rotational speed.

15 25. The system of Claim 17, wherein the adaptive saw cut circuit is further configured to map a shape of at least a portion of the semiconductor wafer based on detecting when the saw blade is contacting at least a portion of the semiconductor wafer.

20 26. The system of Claim 25, wherein the adaptive saw cut circuit is configured to map a shape based on a first cutting pass of the at least a portion of the semiconductor wafer.

25 27. The system of Claim 26, wherein the adaptive saw cut circuit is further configured to establish a path of the saw blade for a second cutting pass of the at least a portion of the semiconductor wafer based on the mapped shape of the at least a portion of the semiconductor wafer.

28. The system of Claim 17, wherein the adaptive saw cut circuit is further configured to provide a minimum saw cut length for each saw cut irrespective of detection of the saw blade of the dicing saw contacting the semiconductor wafer.

30 29. A system for controlling a semiconductor dicing saw, comprising:
a semiconductor dicing saw; and
means for dynamically adjusting a saw cut pattern of the semiconductor dicing saw during a sawing operation of at least a portion of a semiconductor wafer.

30. A computer program product for controlling a semiconductor dicing saw, comprising:

a computer readable medium having computer readable program code embodied therein, the computer readable program code comprising:

- 5 computer readable program code configured to dynamically adjust a saw cut pattern of the semiconductor dicing saw during a sawing operation of at least a portion of a semiconductor wafer.